

Claims

1. A stretcher including a bed on which a sick or injured person will be laid, legs foldably provided on the bed and casters provided at the legs, respectively, the
5 stretcher further comprising an ascent assist device having: a lifting mechanism for giving the bed an ascending force; and a switch for turning the lifting mechanism ON/OFF.

2. The stretcher of claim 1, wherein

10 the legs are configured to raise the bed by deploying from the bed, and
the lifting mechanism is configured to give the bed an ascending force by giving the legs a force toward deployment.

3. The stretcher of claim 1, wherein

15 the lifting mechanism has an actuator into which high-pressure gas is introduced to give the bed an ascending force, and
the stretcher further comprises a tank for storing high-pressure gas and a gas pipe line for connecting the tank and the actuator.

20 4. The stretcher of claim 3, wherein

the actuator is a pneumatic cylinder, and
the switch is a switch for opening and closing the flow path of the gas pipe line.

25 5. The stretcher of claim 4, wherein

the pneumatic cylinder has a cylinder body and a piston which divides the inner space of the cylinder body into a pressure chamber and a vented chamber, and

the stretcher further comprises a speed controller for controlling the speed of gas exhausted from the vented chamber.

6. The stretcher of claim 4, wherein the gas pipe line is provided with a speed controller for controlling the speed of high-pressure gas flowing from the tank into the pneumatic cylinder.

7. The stretcher of claim 3, wherein a gas inlet is formed through which high-pressure gas is introduced into the tank from a gas source placed in an ambulance vehicle.

8. The stretcher of claim 1, wherein the ascent assist device further comprises a speed control means for controlling the speed of the bed raised by the lifting mechanism.

9. The stretcher of claim 1, further comprising a speed control means for controlling the descending speed of the bed when the raised bed is lowered.

10. The stretcher of claim 1, further comprising a deactivation means for deactivating the ascent assist device.

11. A method for using the stretcher of claim 7, wherein before a sick or injured person is carried on the stretcher, the gas inlet is connected to the gas source in an ambulance vehicle and the tank is charged with high-pressure gas from the gas source.

12. A stretcher including a bed on which a sick or injured person will be laid, legs foldably provided on the bed to deploy with ascent of the bed and fold with descent of the bed, and casters provided at the legs, respectively, the stretcher further comprising an initial ascent assist device for giving the bed an ascending force in an initial stage

of a lifting work during which the bed is raised from the lowest level to a predetermined halfway level between the lowest and highest levels of the bed.

13. The stretcher of claim 12, wherein the initial ascent assist device comprises: an actuator into which high-pressure gas is introduced to give the bed an ascending force; and a switch for turning the actuator ON/OFF.

14. The stretcher of claim 13, wherein the actuator is a pneumatic cylinder.

15. The stretcher of claim 12, wherein the initial ascent assist device comprises: a hydraulic actuator for giving the bed an ascending force; and a switch for turning the actuator ON/OFF.

16. The stretcher of claim 12, wherein the initial ascent assist device comprises: a motor-driven actuator for giving the bed an ascending force; and a switch for turning the actuator ON/OFF.

17. The stretcher of claim 12, wherein the initial ascent assist device comprises: a treadle lever pivotally mounted on the bed to angularly move through the depression by foot; and a link mechanism for converting a force of angular movement of the treadle lever to a force to raise the bed.

18. The stretcher of claim 12, further comprising a main ascent assist device for giving the bed an ascending force in a later stage of the lifting work during which the bed is raised from the halfway level to the highest level or over all the stages of the lifting work during which the bed is raised from the lowest level to the highest level.

19. The stretcher of claim 18, wherein the main ascent assist device is a device for giving the bed an ascending force by giving the legs forces toward deployment.

20. The stretcher of claim 18, the main ascent assist device comprises: a main actuator
5 into which high-pressure gas is introduced to give the bed an ascending force; and a switch for turning the main actuator ON/OFF.

21. A stretcher which includes a bed on which a sick or injured person will be laid, legs foldably provided on the bed to deploy with ascent of the bed and fold with
10 descent of the bed, and casters provided at the legs, respectively, and is configured to be laid on a support platform with the legs folded up by pushing the legs against the support platform as the legs deploy, the stretcher further comprising:

a deployment force application mechanism for giving the legs forces toward deployment; and

15 a deactivation mechanism for deactivating the deployment force application mechanism when the length of part of the stretcher laid on the support platform exceeds a predetermined length.

22. The stretcher of claim 21, wherein

20 the deployment force application mechanism comprises a pneumatic cylinder, and

the deactivation mechanism comprises a gas release mechanism for releasing high-pressure gas in the pneumatic cylinder.

25 23. A stretcher which includes a bed on which a sick or injured person will be laid, front and rear legs foldably provided at the front and rear sides of the bed, and casters provided at the front and rear legs, respectively, and is configured to be laid on a

support platform from the front side of the bed with the front and rear legs folded up by pushing the legs against the support platform as the front and rear legs deploy, the stretcher further comprising:

5 a deployment force application mechanism for giving at least the rear legs forces toward deployment; and

a deactivation mechanism for releasing the forces toward deployment given to the rear legs from the deployment force application mechanism when the length of part of the stretcher laid on the support platform exceeds a predetermined length.

10 24. The stretcher of claim 23, wherein

the bed includes a rail extending in a longitudinal direction of the bed,

at least the front legs are provided with a slider for sliding on the rail according to the deployment and folding of said at least front legs, and

15 the deactivation mechanism comprises a position sensor for detecting whether the slider passes through a predetermined position on the rail and is configured to deactivate the deployment force application mechanism when the slider passes through the predetermined position.

25 25. The stretcher of claim 24, further comprising a locking mechanism for locking the front and rear legs in deploying positions such that the locking can be released in laying the stretcher onto the support platform, wherein

the deployment force application mechanism comprises a pneumatic cylinder, and

25 the deactivation mechanism comprises a gas release mechanism for releasing high-pressure gas in the pneumatic cylinder when the slider passes through the predetermined position.

26. A stretcher system comprising:

the stretcher of claim 21;

a support platform on which the stretcher is laid,

wherein the support platform is provided with a conveyer for conveying the

5 stretcher onto the support platform.

27. A stretcher system comprising:

the stretcher of claim 23;

a support platform on which the stretcher is laid,

10 wherein the support platform is provided with a conveyer for conveying the
stretcher onto the support platform.